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MENTATION PAGE

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) THIS REPORT CONTAINS THE TEST RESULTS OF TESTING PERFORMED ON THE PACKAGING FOR THE CHARGE, DEMOLITION, CLIPPED, M221						
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I. REPORT NUMBER: DOD POP HMTR/AYD 91-001

II. TITLE: Performance Oriented Packaging Report for Charge, Demolition:
Clipped, M221

AUTHOR: Frank M. Snizek

PERFORMING ACTIVITY: ARDEC

ADDRESS: U.S. Army
Armament Research Development and Engineering Center
Picatinny Arsenal, NJ 07806-5000

DATE: 7 Mar 91

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1. DATA SHEET

CONTAINER:

Type: Box
UN Code: 4C1
Nomenclature: Packing and Marking for Box, Wirebound, for
Charge, Demolition, Clipped, M221
Specification Number: N/A
Drawing Number: 9392513
Material: Natural wood
Gross Weight: 54.7 pounds
Outside Dimensions: 14 1/2 x 12 5/8 x 8 1/4

PRODUCT:

Name: Charge, Demolition, Clipped, M221
Drawing Number: 9392500
United Nations Number: UN0034
United Nations Packing Group: II
Physical State: Solid
Quantity per Container: 72

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2. BACKGROUND

This report contains the tests performed and the test results of the packaged Charge, Demolition, Clipped, M221. The tests were performed in accordance with the United Nations Transport of Dangerous Goods, Fourth Edition and the Federal Register, dated Dec. 21, 1990 which will become effective in the 49 CFR in October 1991.

3. PACKAGING DESCRIPTION

The M221 is packaged 36 charges/M2A1 metal box IAW Dwg. 9392512. Two M2A1 metal boxes are overpacked with a wooden wirebound box IAW Dwg. 9392513.

4. TESTS

4a. Four wirebound box configurations packed IAW Dwg. 9392513 were dropped from forty feet and four were dropped from seven feet, both of which exceed the UN drop height requirement of four feet. The packed wirebound box configurations were dropped on a rigid, nonresilient, flat, horizontal surface. The tests were conducted at 3 temperatures. The orientations, temperatures, and drop height were as follows:

DROP ORIENTATION	(ft) DROP HEIGHT	(degrees F) TEMPERATURE
45 degree on bottom	40	amb.
side	40	amb.
top	40	amb.
end	40	amb.
top	7	-65
45 degree on edge	7	-65
top left corner at 45 degrees	7	160
bottom	7	160

Note: This exceeds the UN requirement which is 5 containers (packed wirebound box configurations) dropped once each in 5 orientations (bottom, top, long side (side), short side (end), and corner

4b. Three packed wirebound box configurations were tested Loose Cargo IAW 178.608 of the Federal Register dated December 21, 1990. The vibrating platform had a vertical double amplitude (peak to peak displacement) of one inch. The test was performed for one hour on two of the packed wirebound box configurations and for two hours, which exceeds the UN requirement of one hour, on one packed wirebound box configuration. The frequency of the platform was such that the wirebound boxes were raised from the vibrating platform approximately 1/2 inch, which exceeds the UN requirement of .063 inch.

4c. A stacking test was not performed, but will pass based on analogy of similar packaging for small arms containers with gross weight of 79.4 pounds which is greater than the gross weight for the M221 package of 54.7 pounds.

5. RESULTS

The packaging passed all tests. The package did not exhibit any damage liable to affect safety during transport. None of the contents of the package discharged or spilled. It is considered safe for both CONUS and international transportation in accordance with United Nations Transport of Dangerous Goods and the Federal Register.